

INTERLABORATORY COMPARISON OF ENVIRONMENTAL ANALYSES ASSOCIATED WITH SYN-FUEL PRODUCTION, W. E. May, J. M. Brown, S. N. Chesler, F. R. Guenther, H. S. Hertz, L. R. Hilpert, R. N. Parris, K. L. Ritchie, and S. A. Wise, Center for Analytical Chemistry, National Bureau of Standards, Washington, DC 20234

In order to begin evaluating the state-of-the-art of the determination of pollutants associated with the production of alternate fuels, seven collaborative studies have been conducted by NBS. The aim of the five initial studies was to ascertain how well participating laboratories could perform the final quantitation step in a trace organic analytical scheme. The materials examined in these initial studies were two polynuclear aromatic hydrocarbon in hexane samples, a phenols in water sample, a phenols in hexane sample and a N-heterocyclic compounds (azaarenes) in hexane sample. Each of these samples contained between five and eight pure compounds, with each compound being present at the 1-100  $\mu\text{g/mL}$  (ppm) level.

The last two collaborative studies involved quantitative analyses of selected phenols, polynuclear aromatic hydrocarbons and N-heterocyclics in a shale oil and a solvent refined coal (SRC) material. Such analyses usually required a minimum of three steps: (1) Isolation of the analyte from the sample matrix; (2) Separation of the analyte from non-analyte interference; (3) measurement of detector response for the analyte and relating that to the concentration of the analyte in the original sample. The results of these collaborative studies will be reported and discussed along with methodologies developed at NBS for certifying the concentration of selected phenols, PAH and N-heterocyclics in alternate fuels.